WHAT IS CLAIMED IS:

1.   A method for interlacing a progressive video sequence to produce an interlaced video sequence, wherein object motion estimation between frames is used to interpolate a motion offset of at least one field of an interlaced output.

2.   A method for interlacing a progressive video sequence to produce an interlaced video sequence, the method comprising:

obtaining at least two consecutive frames of a progressive scan video sequence;

segmenting at least one of said frames into constituent objects;

estimating a motion of said constituent objects between the at least two frames;

using the estimated motion for each object between frames to interpolate the motion of each object between the first frame and an intermediate frame; and

using the interpolated motion for each object to construct the intermediate frame.

3.   The method of claim 2, further comprising:

extracting a first field from the first frame; and

extracting a second field from the intermediate frame.

4.   The method of claim 3, wherein the first and second fields comprise fields of even and odd rows.

5.   The method of claim 3, wherein the first and second fields comprise fields of even and odd columns.

6.   The method of claim 2, further comprising:

filling areas of the intermediate frame that are exposed by the interpolated motion for each object.

7.   The method of claim 6, wherein if the exposed area in the intermediate frame corresponds to an exposed area in the next frame, then data from the next frame is used to fill the exposed area in the intermediate frame.

8.   The method of claim 7, wherein if the exposed area in the intermediate frame does not correspond to an exposed area in the next frame, then data from the first frame is used to fill the exposed area in the intermediate frame.

9.   The method of claim 6, wherein color data for neighboring objects is used to fill the exposed area in the intermediate frame.

10.   The method of claim 2, further comprising calculating and using an average of the estimated motion for each object between frames in constructing the intermediate frame.

11.   The method of claim 2, further comprising comparing the estimated motion for a first object with estimated motions for neighboring objects to determine a consistency of the estimated motions.

12.   The method of claim 2, further comprising comparing the estimated motion for a set of pixels with estimated motions for the set of pixels in a nearby frame to determine a consistency of the estimated motions.

13.   An apparatus for interlacing a progressive video sequence to produce an interlaced video sequence, the apparatus comprising:
        a frame buffer configured to store a plurality of consecutive progressive frames; and
        a processor coupled to the frame buffer that is configured to take at least two of the consecutive frames from the frame buffer and apply object motion estimation to generate at least one intermediate frame.

14.   The apparatus of claim 13, wherein the intermediate frame is stored in the frame buffer.

15.   The apparatus of claim 14, further comprising:
        a field buffer coupled to the processor.

16.   The apparatus of claim 15, wherein the processor extracts fields from the frames in the frame buffer and stores the extracted fields in the field buffer.

17. The apparatus of claim 16, wherein the extracted fields are output from the field buffer to be displayed as an interlaced video sequence.